

# Performance of a Blood-Based Test for Colorectal Cancer Screening Adjusted to the U.S. Census Age and Sex Distribution

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<sup>a</sup>Association at time of abstract

## Disclosure information

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# Background



## Suboptimal screening rates

**59%**

of eligible individuals in the US were up to date with screening<sup>1,a</sup>



## Blood-based screening

provides another modality to help increase screening adherence beyond colonoscopy and stool-based tests<sup>2</sup>

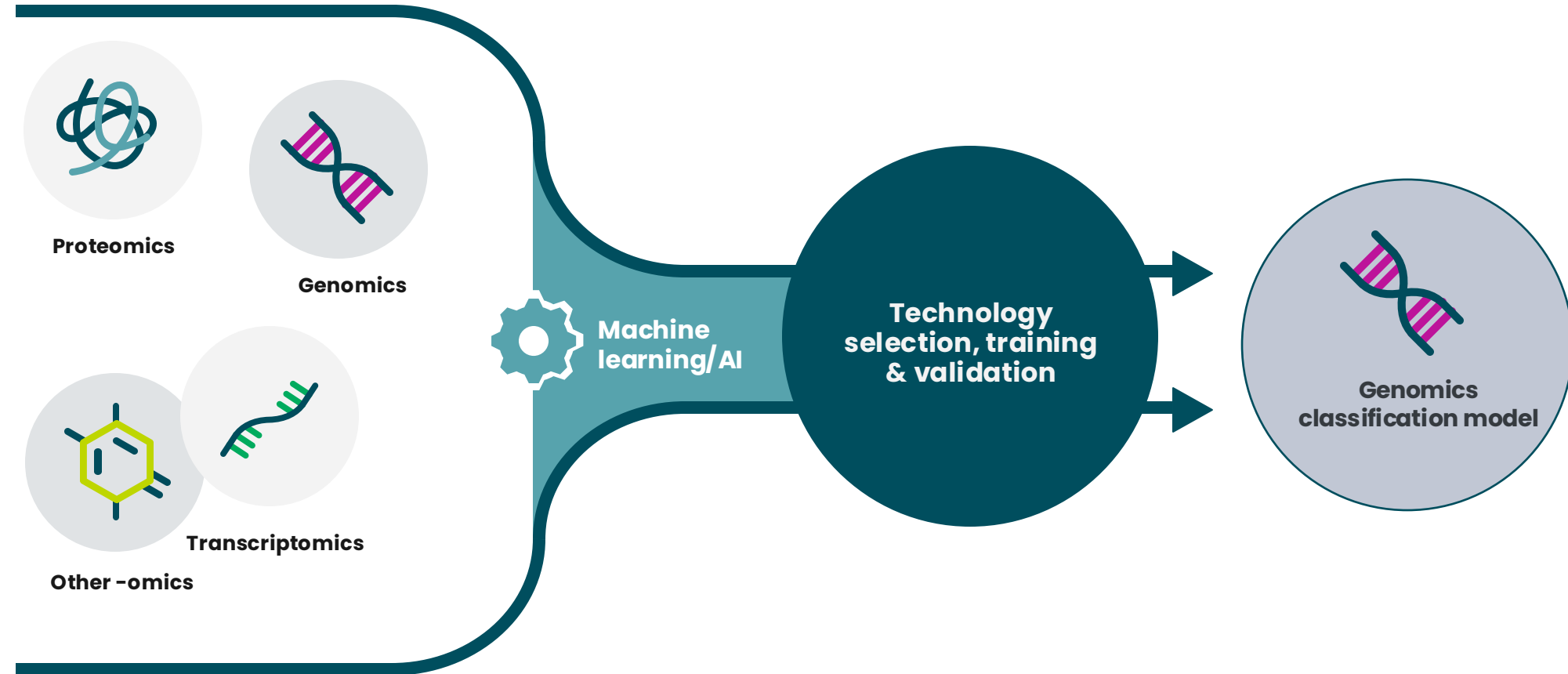
<sup>a</sup>Eligible adults aged 45 years and older in the US, 2021.

1. Siegel RL, et al. *CA Cancer J Clin.* 2023;73(3):233-254. 2. Liang PS, et al. *Clin Gastroenterol Hepatol.* 2023;21(11):2951-2957.e2.

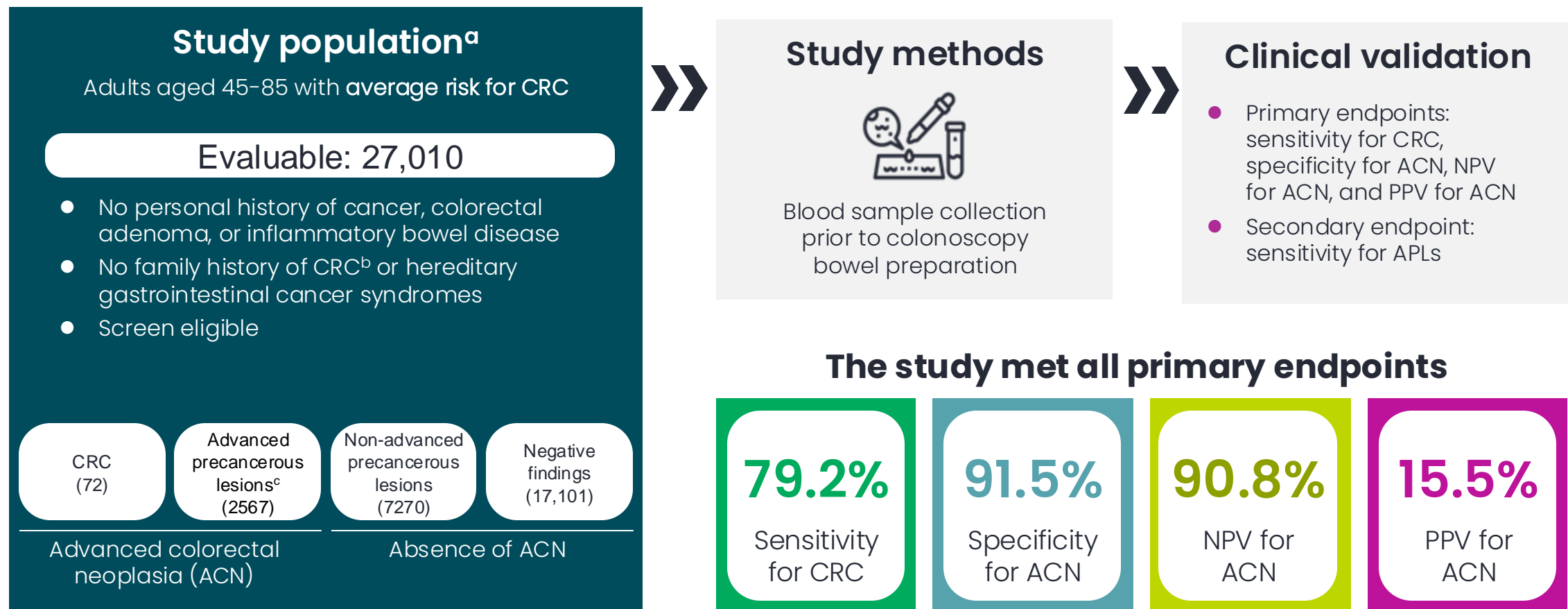
# Blood-based colorectal cancer screening test

Detecting signatures associated with advanced colorectal neoplasia (ACN) in plasma derived from whole blood samples

## Development platform



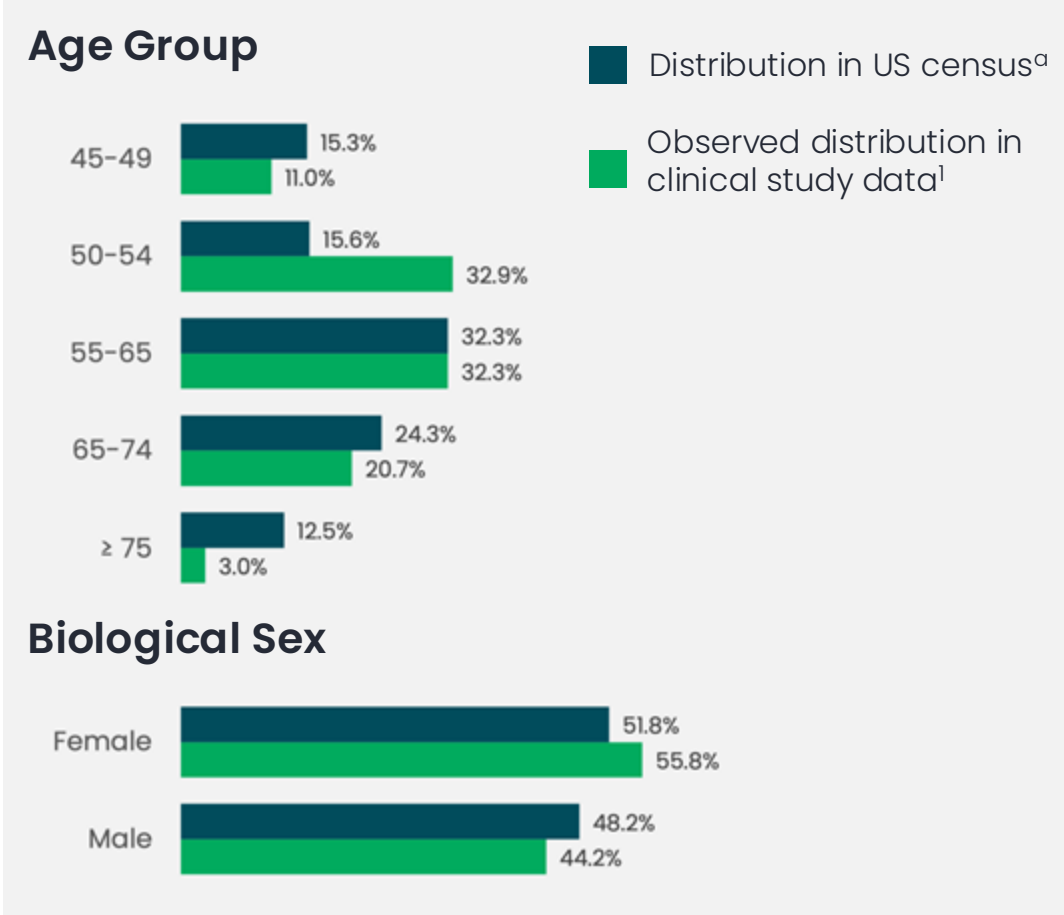
# PREEMPT CRC assessed the clinical performance of an investigational blood-based test in an average-risk population



<sup>a</sup>Shaukat A, et al. Presented at: Digestive Disease Week 2024; May 18–21, 2024; Washington, DC, USA. Abstract S1123. <sup>b</sup>At least one first-degree relative diagnosed with colorectal cancer before age 60 years; at least two first-degree relatives diagnosed with colorectal cancer at any age. <sup>c</sup>APLs included carcinoma in situ or high-grade dysplasia, adenoma with villous growth pattern ( $\geq 25\%$ ), adenoma  $\geq 1.0$  cm, sessile serrated lesion with or without cytological dysplasia  $\geq 1.0$  cm, and traditional serrated adenoma.

ACN, advanced colorectal neoplasia; APL, advanced precancerous lesion; CRC, colorectal cancer; NPV, negative predictive value; PPV, positive predictive value.

# Clinical validation studies vary in population characteristics due to recruitment, enrichment and sampling strategies



**Prespecified analysis in census-adjusted population**

Direct rate standardization was used to project the study endpoints to the general population based on age brackets and biological sex, an adjustment method deployed by FDA for other colorectal cancer screening products.<sup>2,3</sup>

<sup>a</sup>US census sex and age data were referenced from "Annual Estimates of the Resident Population from April 1, 2020 Base Estimates by Age and Sex for the United States: April 1, 2020 to July 1, 2023" (nc-est2023-agesex). U.S. Census Bureau, Population Division. 1. Shaukat A, et al. Presented at Digestive Disease Week 2024; May 18-21, 2024; Washington, DC, USA. Abstract S1123. 2. U.S. Food & Drug Administration. Executive summary for Cologuard. Published 2014. <https://wayback.archive-it.org/7993/20170405192818/https://www.fda.gov/AdvisoryCommittees/CommitteesMeetingMaterials/MedicalDevices/MedicalDevicesAdvisoryCommittee/MolecularandClinicalGeneticsPanel/ucm390219.htm>. 3. Summary of Safety and Effectiveness Data for [Guardant Shield]. US Food and Drug Administration. Published 2024. [https://www.accessdata.fda.gov/cdrh\\_docs/pdf23/P230009B.pdf](https://www.accessdata.fda.gov/cdrh_docs/pdf23/P230009B.pdf)


# PREEMPT test performance adjusted to age and sex distribution of US census population

	Observed % (95% CI)	US Census Age and Sex Adjusted <sup>a</sup> % (95% CI)
<b>Primary endpoints</b>		
Sensitivity for CRC	79.2 (68.4–86.9)	81.1 (71.3–88.1)
Specificity for ACN	91.5 (91.2–91.9)	90.4 (90.0–90.7)
Negative predictive value for ACN	90.8 (90.7–90.9)	90.5 (90.4–90.7)
Positive predictive value for ACN	15.5 (14.2–16.8)	15.5 (14.3–16.7)
<b>Secondary endpoint</b>		
Sensitivity for APL	12.5 (11.3–13.8)	13.7 (12.4–15.0)

<sup>a</sup>Direct rate standardization was used to project the study endpoints to the general population based on age brackets and biological sex. ACN, advanced colorectal neoplasia; APL, advanced precancerous lesions; CRC, colorectal cancer.




# Conclusion and future directions



## Conclusion

PREEMPT CRC successfully met the primary endpoints.

Results were robust in a prespecified direct standardization adjustment to the sex and age distribution of the US population, demonstrating 81.1% sensitivity for CRC, 90.4% specificity for ACN and 13.7% sensitivity for APL.



## Future directions

This **new blood-based test** may provide a **convenient** and **effective option for CRC** screening in the intended-use population

**Sensitivity for CRC and APL** will continue to be optimized in future research and development

**Modeling and outcomes of studies** that consider test performance, CRC progression, adherence, and cost **will help determine optimal screening frequency**



# Acknowledgments

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- Investigators and site staff
- Data Monitoring Committee
- Study team and study partners

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